



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/477,876	01/05/2000	CHRISTOPHER M. HERRING	P04658	9857
34456	7590	08/23/2005	EXAMINER	
TOLER & LARSON & ABEL L.L.P. 5000 PLAZA ON THE LAKE STE 265 AUSTIN, TX 78746			HYUN, SOON D	
			ART UNIT	PAPER NUMBER
			2663	

DATE MAILED: 08/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/477,876

Applicant(s)

HERRING ET AL.

Examiner

Soon D. Hyun

Art Unit

2663

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06/09/2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6,25,29 and 36-52 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6,25,29 and 36-52 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

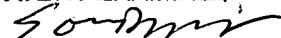
- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

SOON HYUN  
PATENT EXAMINER

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 06/09/2005 has been entered.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-6, 25, 29, and 36-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haartsen (U.S. Patent No. 6,393,007) in view of Hogger (U.S. patent No. 6,490,262).

Regarding claims 1, 3, 48, 49, and 52, Haartsen discloses a system for concurrent wireless voice and data communications comprising: a first transceiving unit

Art Unit: 2663

(a radio access unit 2 in FIG. 1) tether to a voice network (PSTN) and to a data network (ISDN); and

a second, mobile transceiving unit (6 or 7);

the first transceiving unit operable to wirelessly transmit voice information from the voice network over a first dedicated set of time slots (slot A) of a plurality of time frames (hop k and hop k+1 in FIG. 4) and data information (d) from the data network over a second dedicated set of time slots (slots 8-11) of the plurality of time frames.

The second mobile transceiving unit to receive and separate the voice information and the data information from the first transceiving unit.

Haartsen further teaches that a carrier frequency of the channel changes in a pseudo random manner (col. 2, lines 23-29 and col. 11, lines 15-16).

However, Haartsen differs from the present application in that time slot hopping scheme together with the frequency hopping scheme is also applied to voice channels to improve interference diversity (col. 4, lines 4-14).

Hogger teaches that a pseudo random frequency hopping scheme without time slot hopping scheme for TDMA frames (see claim 1). Those of skill in the art would have been motivated by Hogger to incorporate the frequency hopping scheme only into Haartsen to provide a simpler circuitry to the transceiving units, since implementing the time slot hopping together with the frequency hopping is much more complicated.

Therefore, it would have been obvious to one having ordinary skill in the art to incorporate a frequency hopping scheme without time slot hopping into Haartsen.

Art Unit: 2663

Regarding claims 2, and 4-6, Haartsen does not teach that the data network is a V.90 modem coupled to PSTN, or cable modem coupled to a CATV system, or an Ethernet network as recited in the claims. It will be apparent to those skilled in the art that V.90 modem, a cable modem or an Ethernet could be used for the data network of Haartsen, because no unexpected results can be seen from the use of such data networks. Therefore, it would have been obvious to one having ordinary skill in the art to incorporate a V.90 modem coupled to PSTN, or cable modem coupled to a CATV system, or an Ethernet network for the data network.

Regarding claims 25 and 29, Haartsen does not explicitly teach that a time slot containing data information comprises a forward error correction code. It would have been obvious to one having ordinary skill in the art to add a forward error correction code to data information for a receiver to correct an error, if any, when the data is received.

Regarding claim 36, Haartsen further discloses that the first transceiving unit receives from the second transceiving unit voice information over a third predefined set of time slots (slots 13-15 in FIG. 4) of a time frame and data information over a fourth predefined set of time slots (slots 20-23) of the time frame.

Regarding claims 37 and 38, Haartsen further discloses that a number of the first predefined set of time slots and a number of the second predefined set of time slots are equal to a number of the third predefined set of time slots and a number of the fourth predefined set of time slots, respectively.

Regarding claim 39, it will be apparent to those skilled in the art that the number of the first predefined set of time slots could be equal to the number of the second predefined set of time slots when traffic volume for voice and data are same. Therefore, it would have been obvious to one having ordinary skill in the art to allocate same number of time slots for the voice and data.

Regarding claims 40 and 41, it will be apparent to those skilled in the art that the number of predefined set of time slots for downstream and upstream could be different when the traffic volume is different. Therefore, it would have been obvious to one having ordinary skill in the art to allocate different number of time slots for downstream and upstream.

Regarding claim 42, Haartsen discloses a method comprising:

transmitting voice information from a transceiving unit (a radio access unit 2 in FIG. 1) over a first dedicated set of time slots (slots 1 and 6 in FIG. 4) associated with a first plurality of time frames (hop k frame and hop k+1 frame in FIG 4 of a wireless channel 9 in FIG 1);

transmitting data information from the transceiving unit over a second set of time slots (slot 8 in FIG. 4) associated with the first plurality of time frames of the wireless channel.

However, Haartsen differs from the present application in that time slot hopping scheme together with the frequency hopping scheme is applied to voice channels to improve interference diversity (col. 4, lines 4-14).

Hogger teaches that a pseudo random frequency hopping scheme without time slot hopping scheme for TDMA frames (see claim 1). Those of skill in the art would have been motivated by Hogger to incorporate the frequency hopping scheme only into Haartsen to provide a simpler circuitry to the transceiving units, since implementing the time slot hopping together with the frequency hopping is much more complicated.

Therefore, it would have been obvious to one having ordinary skill in the art to incorporate a frequency hopping scheme without time slot hopping into Haartsen.

Regarding claim 43, Haartsen further discloses that the first transceiving unit receives from the second transceiving unit voice information over a third predefined set of time slots (slots 13-15 in FIG. 4) of a time frame and data information over a fourth predefined set of time slots (slots 20-23) of the time frame.

Regarding claims 44 and 45, Haartsen further discloses that a number of the first predefined set of time slots and a number of the second predefined set of time slots are equal to a number of the third predefined set of time slots and a number of the fourth predefined set of time slots, respectively.

Regarding claim 46, it will be apparent to those skilled in the art that the number of the first predefined set of time slots could be equal to the number of the second predefined set of time slots when traffic volume for voice and data are same. Therefore, it would have been obvious to one having ordinary skill in the art to allocate same number of time slots for the voice and data.

Art Unit: 2663

Regarding claim 47, it would have been obvious to one having ordinary skill in the art to incorporate a less or higher hopping rate as long as no unexpected results can be seen from the use of the hopping rate.

Regarding claim 50, Haartsen further discloses that the frequency band for the system is the ISM band (approx. 2401-2480 MHz).

Regarding claim 51, Haartsen teaches 79 carrier frequencies, but it would have been obvious to one having ordinary skill in the art to incorporate less or more carriers (i.e., 75 carriers) in the frequency band as long as no unexpected results can be seen from the use of the 75 carriers.

### ***Conclusion***

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Soon D. Hyun whose telephone number is 571-272-3121. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Q. Ngo can be reached on 571-272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Art Unit: 2663

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



S. Hyun  
08/18/2005